VERMONT CONSTRUCTION SPECIFICATION

57 – TREE REVETMENTS

1. Scope

The work shall consist of installing tree revetments to control erosion and stabilize streambanks in accordance with the drawings and these specifications.

2. Materials

Trees shall be freshly cut well-branched conifers. Northern white cedar and spruce trees work best. Hemlocks or balsam fir will work on some smaller streams but the limbs often tend to be brittle, especially with the larger hemlock trees. Do not use any species of pine. Branch whorls should be live and entire around the tree (six live branches minimum) and distance between live whorls no greater than 1.5 feet. Branch length will vary with tree size, growth habit, and species. Cedars do not have a conspicuous whorled growth form. Select only cedars that you cannot "see through". The trunk should be cut just below the lowest live limbs.

3. Timing of Preparation

All placements of tree revetments shall be accomplished during the summer and early autumn (low water periods) season, June 1 through October 30.

4. Installation

If possible, revetments should be installed concurrently with the streambank grading. Remove any sod, stumps, or other debris that would cause the revetment to be pushed out into the current. Revetments should be installed within ten days of grading operations. If revetments cannot be installed within ten days, graded streambanks shall be protected with straw/hay mulch at a minimum rate of two tons per acre or install an approved erosion control blanket.

Revetments shall be installed parallel to the streambank with the basal end oriented up stream. Starting at the downstream end, overlap trees 1/4 to 1/3 of their length in a shingle fashion. Care should be taken to avoid damage or removal of tree limbs. The first row of trees should be placed so the tree crown is at the toe of the streambank slope. The bulkiest branches on the tree should be oriented on the stream side of the revetment. Revetments should extend to stable sections of the streambank both upstream and downstream. Anchors should be installed at a 45 degree angle into the streambank. Wrap the anchor cable around the basal end of the inside tree and around the outside tree top and bring the cable back onto itself and clamp it using an approved mechanical device. Trees should be secured as tightly to the streambank with cable and earth anchors as possible. If necessary, holes should be drilled approximately one foot from the base of the tree. Drill hole should be at least twice the diameter of the cable. On larger trees and streams subject to ice flow, extra anchors may be required. The trees are thus secured tightly to the bank with cable and earth anchors as the drawings indicate.

Depending on the bank height trees may be manually lowered over the bank or heavy equipment may be used with care taken to prevent soil damage or bank collapse**. Workers should stay clear of trees as they are positioned with equipment.**